Remarks

The Applicants have amended Claims 132 and 133 to recite a thermoplastic plastic polymer alloy. Support made be found in paragraph [0192], for example.

The Applicants have added Claims 158 and 159 to recite that the nanofiber synthetic paper comprises disarranged nanofibers made of a thermoplastic polymer "by melt spinning a polymer alloy into polymer alloy fibers comprising a sea component and island components and then removing the sea component to form the disarranged nanofibers from the island components in a homogeneously dispersed arrangement." Support may be found throughout the original specification such as in paragraph [0039] and paragraphs [0077]-[0083].

Claims 132-134 and 136-150 stand rejected under 35 USC §103 over Chung. The Applicants note with appreciation the Examiner's detailed comments hypothetically applying Chung against those claims, including the additional comments in the "Response to Arguments" section. The Applicants respectfully submit that Chung fails to disclose, teach or suggest the subject matter of those claims. Details follow.

The Applicants' last Response addressed the issue of "freeness" of the disarranged nanofibers and took the position that Chung fails to disclose, teach or suggest that claimed feature. That feature is brought about by a completely different way of forming the nanofibers and the subsequent synthetic paper relative to Chung. Thus, this rejection acknowledges that the Applicants and Chung use different nanofiber fabrication processes to arrive at their respective nanofiber particles. The Applicants agree.

However, the Applicants respectfully submit that the above changes to Claims 132 and 133 readily distinguish over Chung. In that regard, Chung engages in an electrospinning process such as that described in paragraph [0019] of the Applicants' specification. That paragraph is

reproduced below for the Examiner's convenience.

> In the meantime, as a simple technique for reducing the diameter of ultrafine fibers to the nanometer level, a technique called electrospinning is spotlighted in recent years. ··· Furthermore, since the nonwoven fabric obtained by electrospinning is obtained as the solvent is evaporated in the step of fiber formation, the fiber aggregate is often not oriented or crystallized, and a nonwoven fabric with a strength very lower than those of ordinary nonwoven fabrics only can be obtained to greatly restrict its applicable range. Moreover, because of the solvent evaporated in the step of fiber formation, the electrospinning as a production technique has such problems that any measure must be taken to improve the working environment and that the solvent must be recovered.

This is sharply contrasted to the Applicants' subject matter as recited in independent Claims 132 and 133. These differences can be seen from paragraphs [0049] and [0159] of the Applicants' specification, again reproduced below for the Examiner's convenience.

> In this invention, said disarranged nanofibers can be used to make the intended compound solution, emulsion and gel. This can be achieved only when the aforesaid nanofibers are used. For example, since the nanofibers obtained by the electrospinning can be usually collected only in the form of a nonwoven fabric, there is no idea of homogeneously dispersing the obtained nanofibers into a solvent, and it is difficult to do so. Actually there has been no case of dispersing the nanofibers into a solvent. On the other hand, in this invention, a melt spinning method with high productivity is used to obtain polymer alloy fibers, and the sea component is removed from them to obtain an aggregate of nanofibers. They are further shortened, beaten and dispersed to obtain disarranged nanofibers. Therefore, the compound solution emulsion and gel as described above could be efficiently produced for the first time.
>
> ... Furthermore, in the case where a nanofiber synthetic paper is obtained by removing the sea component from a synthetic paper composed of 'polymer alloy fibers', it is preferred to use binder fibers resistant against the liquid reagent and solvent. The number average single fiber diameter of generally commercially available binder fibers is usually as thick as more than 10 μm. So, in order to obtain a dense paper sheet, it is preferred to use ultrafine fibers with a single fiber diameter of 1 to 10 μm as binder fibers. It is also preferred to use a suitable resin based binder.

Thus, it can be seen that the Applicants produce nanofibers made of thermoplastic polymer alloy. Such fibers are not produced by Chung. The Applicants therefore respectfully submit that Chung remains inapplicable to Claims 132-134 and 136-150. Withdrawal of the rejection is accordingly respectfully requested.

The rejection also contends that the Applicants fail to demonstrate why the electrospun nanofibers of Chung cannot yield the claimed freeness even though there may be some diameter variation within a given nanofiber and suggests that the Applicants amend their claims to reflect the nanofiber formation process.

The Applicants have, as noted above, added Claims 158 and 159 to recite that the disarranged nanofibers are made of a thermoplastic polymer "by melt spinning a polymer alloy into polymer alloy fibers comprising a sea component and island components and then removing the sea component to form the disarranged nanofibers from the island components in a homogeneously dispersed arrangement." This manner of melt spinning and subsequent removal of the resulting sea component from the island components to form a homogeneously dispersed arrangement is completely different from the electrospinning process of Chung and has a direct impact on the freeness of the disarranged nanofibers. As can be seen by referring to Fig. 1 of Chung, the electrostatic field existing between the emitter 40 and its rotating outward facing portion 42 and the collecting media 70 is virtually uncontrollable with respect to the manner in which the fibers are formed and the location of those fibers as they collect on the collecting media due to the uncontrollability, other than the intensity, of the electrostatic field.

This is sharply contrasted to the Applicants' methodology of Claims 158 and 159 with respect to melt spinning and then separation of the sea component from the island components which is a very highly controllable process that can result in the homogeneously dispersed

arrangement of the disarranged nanofibers. This thus results in the desired freeness of the disarranged nanofibers within the claimed range. The Applicants can control the formation process of the polymer alloy fibers and then can similarly control the removal of the sea component from the island components in a way that results in the homogeneously dispersed arrangement of the disarranged nanofibers.

The Applicants therefore respectfully submit that Claims 158 and 159 reflect the nanofiber formation process and how that process would yield physically dissimilar nanofibers with respect to their disarrangement and the freeness of the disarranged nanofibers.

Claims 132-136, 138-140, 142, 145, 146 and 150 stand provisionally rejected on the grounds of nonstatutory obviousness-type double patenting over Claims 1-19 of copending Application No. 11/587,128. The Applicants respectfully request that treatment of this rejection be held in abeyance given the "provisional" nature of the rejection.

Claims 132-135, 139, 140, 142, 145-147, 149 and 150 stand provisionally rejected on the grounds of nonstatutory obviousness-type double patenting over Claims 1, 3, 4, 7-10, 12-16 and 35 of copending Application No. 11/578,926. The Applicants respectfully request that treatment of this rejection be held in abeyance given the "provisional" nature of the rejection.

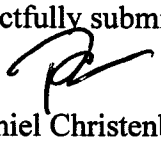
Claims 132-135, 144, 145, 146 and 150 stand provisionally rejected on the grounds of nonstatutory obviousness-type double patenting over Claims 1-16 of US Patent 7,666,504. The Applicants respectfully request that treatment of this rejection be held in abeyance given the "provisional" nature of the rejection.

Claims 132-135, 139, 140, 142, 143-150 stand provisionally rejected on the grounds of nonstatutory obviousness-type double patenting over Claims 1, 4, 7, 8, 10-12, 16-19, 53, 56, 57 and 59 of co-pending Application No. 10/532,082. The Applicants respectfully request that

treatment of this rejection be held in abeyance given the "provisional" nature of the rejection.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



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